

SWEDEN

C.O.ÖBERG & Co.  
ESKILSTUNA



FACTS  
ABOUT  
FILES



# FACTS ABOUT FILES

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C. O. ÖBERG & Co:s A.-B.

FILE MANUFACTURERS

ESKILSTUNA

SWEDEN

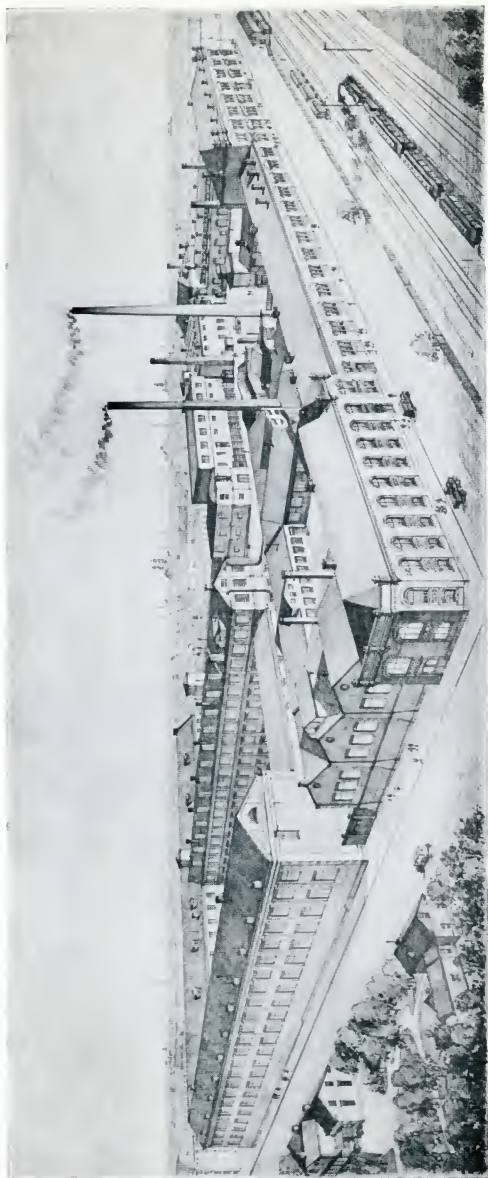
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*FOUNDED 1850*

TELEGRAPHIC ADDRESS:

**ÖBERGS**

ESKILSTUNA



*The plant at Eskilstuna.*

*THIS BOOKLET is issued to give a brief description of our files and of our facilities to produce files of the highest quality.*

*It also contains some data about files which we hope will be of great value to everyone handling Öberg files either for use or re-sale.*

*Eskilstuna in March 1930.*

*C. O. ÖBERG & Co:s A.-B.*

### ***History of the firm.***

In the infancy of the engineering trade in Sweden each manufacturer, and even each mechanic, made his own files, which were then the principal accessories in the metal trades. The files produced in this way were very unsatisfactory. Realizing these facts by personal experience, the late Mr. C. O. Öberg established the firm of C. O. Öberg & Co. in Eskilstuna with the object of making files of a satisfactory and uniform quality to suit the respective trades and requirements.

The firm commenced to manufacture files on April 18th, 1850, on a modest scale with only two workmen. During those early years, the sale of the files proved difficult owing to competition with imported makes, but



## ÖBERG FILES

the excellent quality of the product soon became known and the demand increased steadily.

In 1872, the late Mr. Arvid Nilsson entered the firm, and it is largely due to his efforts that the firm has greatly expanded and has become a concern of reputation in its branch. The motto of the firm has always been: "*None but the very best files to be supplied, the remainder to be scrapped*". By rigidly adhering to this policy, the firm has established *Öberg Files* on the market as *precision tools* of the highest standing, the excellent qualities of which are recognized not only in Sweden but all over the world.

### ***Our factory.***

Our factory to-day covers nearly a whole city block with a total floor space of 100.000 sq. feet. The buildings are entirely of brick and specially equipped for the manufacture of files. The factory is fitted with electric power obtained from Älvkarleby Water Power Station situated about 100 miles distant.



*The factory in year 1876.*

## ÖBERG FILES

### ***Raw material.***

We use nothing but highest grade *Swedish charcoal steel* for the manufacture of our files. The steel is thoroughly tested in our scientifically equipped laboratory prior to being turned into the finished product, likewise the file blanks after the various heat treatments during the manufacturing process. All steel and file blanks, which show the slightest defect, are immediately discarded.

### ***Machine tool equipment.***

Our factory comprises the most modern and specially designed machinery, and we have installed improved machines of our own make, which are handled by trained mechanics with the greatest care and skill.

Each individual workman is *specially trained* for his particular work, and this in conjunction with the very *close inspection* given to each stage of the manufacture, ensures the very *best workmanship*.

Particularly with regard to saw files, of which the Scandinavian saw mill industry is a large consumer, specialization is carried so far, that each file-cutter cuts only one kind of file, and each workman is truly an expert in his line. Our saw files are universally renowned for their excellent and *uniform quality*.

### ***Testing.***

Before packing *each file* is most carefully tested and examined as to *shape, cutting qualities, clear sound and perfect temper*.

We have also special machines, which are not only used for testing the sharpness and durability on different kinds of material, but also serve for making comparative

## ÖBERG FILES

tests on files of other makes. Such practical control and tests make it possible to supply a *uniform product of highest quality*.

### **Guarantee.**

**W**e give an absolute guarantee for every file and rasp branded with our Trade-Mark.

In spite of all our efforts to prevent the possibility of defective files being delivered it is possible, of course, that this may sometimes occur. In such a case we are always pleased, if our customers will report the matter to us, returning the files together with detailed particulars concerning any defect noted. If the claim is found to be justified, we will give full compensation. Consequently, our guarantee is no empty boast, but a statement to be relied upon.



*Hardness Testing and Steel Examination.*



## HOW TO ORDER ÖBERG FILES.

**Designation of files.** When ordering files, please always state:

- 1.) **The Length**, which must always be measured without the tang.



- 2.) **The Shape or Name**, which refers to the type and generally designates the appearance or shape of the file (half-round, round, three square etc.) or the use to which it is to be put (saw file, horse rasp, etc.).
- 3.) **The Cut**, which embraces the kind or character of the teeth as well as the degree of coarseness or fineness (number of teeth per centimeter).

A) The cut is divided in respect of the **character** into:

**Double cut** (fig. 1)

**Single cut** (fig. 2)

**Rasp cut** (fig. 3)

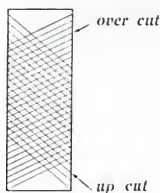


Fig. 1.



Fig. 2.



Fig. 3.

## ÖBERG FILES

B) The cut is divided in respect of the **degree of coarseness** into:

**Coarse**

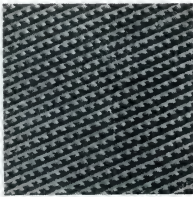
**Bastard**

**Second cut**

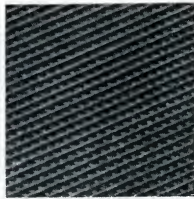
**Smooth**

**Dead smooth**

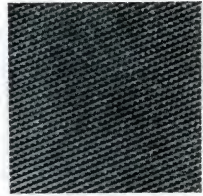
The coarseness of the cut varies also with the length of the file so that, for example, a 14" bastard hand file is cut more coarsely than a 6" bastard hand file.



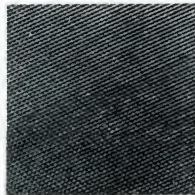
*Coarse.*



*Bastard.*



*Second cut.*



*Smooth.*

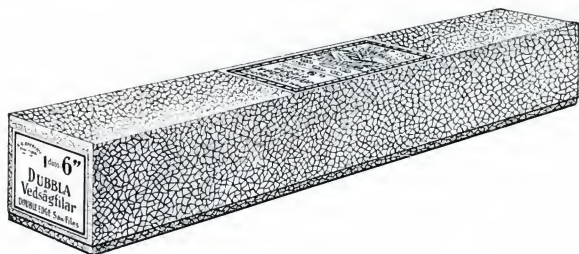


*Dead smooth.*

The specimens of files illustrated above show the **variation in coarseness** of cut for a 14" hand file.

## ÖBERG FILES

**Packing of our files:** All files are packed in stout and attractive boxes.



Files **less than 12"** long are packed in boxes of 1 dozen; files from **12" and upwards** in  $\frac{1}{2}$ -doz. boxes. For files most commonly in use, the ends of the boxes are labelled in different colours to indicate the coarseness of the cut, viz:

green	=	coarse
red	=	bastard
yellow	=	second cut
white	=	smooth and dead smooth, as well as all saw files.

## DIFFERENT TYPES OF ÖBERG FILES.

We distinguish between:

**Engineers' files**, which as a rule are made in double cut;

**Saw Files**, which are usually made in single cut;

**Rasps**, which are generally made with rasp cut;

**Special files**, on which the cut varies according to the use for which the file is intended.

# ÖBERG FILES

## ENGINEERS' FILES.

**Description and use of some of the most common types made by Öbergs as precision files** (See illustrations on pages 18—21).

These files are to a large extent used for machine shop work. As this type of work mostly requires fast and heavy cutting, they are generally **double cut** and in **five degrees of coarseness**, viz: **coarse, bastard, second cut, smooth** and **dead smooth**. The Engineers' files also include "Pansar" files, which are made with **milled** teeth.

**Hand File.** Made from a rectangular steel section and is **parallel** as to **width** but **decreases** in **thickness** towards the end. It is, as a rule, **double cut** and generally **bastard** or **second cut**, but **smooth** and **dead smooth** cut are also used. One edge is "safe" or uncut. Lengths, 3" to 20".

This is one of the most popular files used, chiefly for filing **flat, broad surfaces**. As it has an uncut or "safe" edge and on account of its convexity in the longitudinal direction, it is specially useful for work where the flat file is not suitable. With a second cut or smooth cut, the hand file is sometimes also used for sharpening hoes, spades, etc.

**Pillar File,** has the same shape as the hand file, but is **narrower than the latter**. It is **double cut**, one edge being uncut or "safe". Mostly used in **bastard, second cut** and **smooth**. Lengths, 4" to 8".

This file is chiefly used in the manufacture of tools and for such work where the hand file is too wide, e. g.

## ÖBERG FILES

for filing narrow grooves (key-ways), the manufacture of dies, punches and other similar tools.

**Flat File.** Made from a rectangular steel section and tapers towards the point both in **width** and **thickness**. It is therefore also called "tapered flat". Usually **double cut** and mostly made in **bastard** and **second cut**. Smooth and dead smooth are very rarely in demand. Both edges are cut. Under 8" in length the file is fully taper, but 8" and longer is semi-taper. Lengths, 3" to 20".

This is one of the most commonly used files, suitable for the most varied kinds of work. 8" to 16" bastard to a large extension used by shoe-makers.

**Warding File,** has the same shape as the flat file but is **much thinner**. It is double cut and generally **bastard**, although **second cut** and **smooth** are also used. Through a special hardening process the file possesses a certain degree of flexibility despite its being as hard as glass. Lengths, 3" to 8".

It is specially used by mechanics for fine work such as filing grooves etc. and also in the lock industry for filing the ward notches in keys.

**Lathe File.** Made from rectangular stock and does not taper but is **parallel** both as to **width** and **thickness**. It is **double cut**, one edge being uncut or "safe". As a rule **smooth cut**, but second cut and dead smooth are sometimes used. Lengths, 8" to 20".

On account of the over-cut being straight across the file, and the up-cut displaying a much greater angle than for ordinary files in proportion to the longitudinal axis of the file, it is particularly suited for lathe work, where



## ÖBERG FILES

a smooth surface and precision limits of measure are necessary.

**Half-Round File.** Made from a half-round steel section. All files under 8" long are **narrow pointed**, longer ones being **half-taper**. It is **double cut** and mostly **bastard** or **second cut**. For shorter lengths than 10", smooth and dead smooth cut are frequently used. The edges are sharp. Lengths, 3" to 20".

This file is to a large extent used in workshops and is the most commonly used file alongside hand, flat, three-square and square files.

**Round File.** Made from a round steel section and taper. As a rule **double cut** and mostly in **bastard**, **second cut** or **smooth**. It is also sometimes called Rat Tail File. Lengths, 3" to 20".

Used for filing holes, making fillets, etc.

**Cabinet File** (thin, half-round), has the same type of section as the half-round file, but is **thinner**. It is **double cut** and as a rule **bastard**. Lengths, 8" to 12".

**Oval Tumbler File.** Made from an oval steel section and is tapering. It is **double cut**. Lengths, 4" to 16".

Used for special work in the lock industry etc., but is not much in demand.

**Crossing File**, has one side shaped like a half-round file and the other like a cabinet file. **Double cut** and, as a rule, **second cut** or **smooth**. Lengths, 3" to 14".

**Three Square File.** Made from a three-square steel section and is **tapering**. It is **double cut**, generally **bastard**, **second cut** and **smooth**. Dead smooth is sometimes used for

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files below 8" in length. The file is cut to the very point. The edges are uncut, and are left very sharp, consequently it is unlike the **taper saw file**, which is single cut, not cut to the point and has cut edges. The edges of the three square file are therefore not meant to be used for filing, but are made with the keenest possible edge, so as to enable the operative when filing, to get easily into angles and corners. Lengths, 3" to 20".

A very popular file, being mostly used for filing and cleaning out sharp angles and corners, and also for improving damaged screw-threads, milling cutters, grooves, etc. As the file, by its taper shape, gets a convexity, it is also used for filing flat surfaces.

**Square File.** Made from a square steel section, and is **tapering**, although it is also sometimes made parallel (blunt). It is **double cut** and mostly **bastard**, **second cut** or **smooth**. Lengths, 3" to 20".

It is used in all branches of engineering and for the most varied kinds of work, but chiefly for filing grooves, square holes or dressing out sharp corners.


**Square Rubber.** Taper. It is **double cut** and, as a rule, **coarse** or **bastard**. Nowadays not used to any large extent. Lengths, 16" to 20", square section 25 m/m. to 50 m/m.

**Tap File.** Made from a three square steel section with two cut sides in an angle of  $55^{\circ}$ . **Smooth**, **double cut**. Used for cleaning screw-threads. Length 6".

**Knife File.** Made from a knife-shaped steel section and is tapering. It is **double cut**. The back is uncut, while the thin edge is cut. Lengths, 3" to 12".

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The shape of the file makes it suitable for filing sharp angles in dies and for other similar kinds of work.

**Barrette File.** Manufactured from a  steel section, and is tapering. Generally cut only on the flat side. It is **double cut** and **second cut, smooth** or **dead smooth**. Lengths, 4" to 8".

**Needle File.** Made from the same section as the corresponding **engineers' file** bearing the same name, (Hand, Flat, Half-Round, etc.). It is **double cut**, mostly **smooth**. Total length (including forged handle) 14 and 16 cm.—Used in engineering and work-shops for finer class of work such as in dies etc., and is indispensable to the mechanic turning out finer class work.

**Extra Coarse Double Cut File,** for filing marble, slate, granite, horn, wood etc. Lengths, 12" to 18".

**Heart-Shaped File.** Has a heart-shaped section, and is generally **smooth, double cut**. Lengths, 6" and 8". For filing worms in dies.

*The old method —  
cutting by hand.*



## ÖBERG FILES

***Sugar Works or Beet-Slice File***, in different models for sharpening beet-slicers in sugar factories. **Second cut** and **smooth, double cut**.

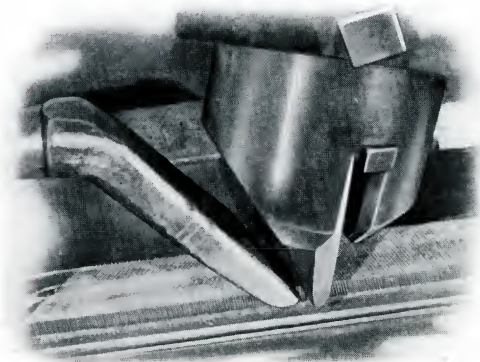
***Milled File***. See "Pansar" File.

***"Pansar" File***. The teeth of the "Pansar" file, in contradistinction to ordinary file teeth, are not cut but **milled**, and are shaped along circular arches, the centres of which closely coincide with the longitudinal axis of the file.

The "Pansar" file **steers itself** during the process of filing, and is therefore a very comfortable tool to work with.

The teeth **keep clean** automatically, inasmuch as the filings are regularly carried off on both sides of the file. This is remarkably advantageous when filing wood, horn and soft substances.

The "Pansar" file can cut much more quickly than an ordinary file, and, although it removes **more material** than a coarse file, it nevertheless leaves a **smoother surface**.



*Nowadays —  
cutting by machine.*

## ÖBERG FILES

Made in four different types, generally **bastard** and **smooth cut**—but occasionally also dead smooth for tanged files and flat blades:

- 1) **"Pansar" Blade** (untanged file), intended for fixing on a holder or "back", is made either **flat** or **half-round**. The flat "Pansar" blade is milled on both sides, the half-round blade only on one side.—The holders are supplied in two styles, either for flat or half-round blades.—Special aluminium holders or backs designed for facilitating filing large plane or table surfaces are also supplied for 14" "Pansar" blades. Lengths, flat blades, 8" to 16" and half-round blades, 12" to 16".
- 2) **Tanged "Pansar" File**, made only flat with milled teeth on both sides. Lengths, 8" to 16".
- 3) **"Pansar" Wood Rasp**, made of the same section of steel as the half-round file. The flat side has milled "Pansar" teeth, and the half-round side is cut. Length, 12".
- 4) **"Pansar" File** (tanged and untanged) can be supplied with **chip-breakers** if specially ordered, and at an extra charge. This is often an advantage when filing particularly soft material, and it increases the capacity of easily releasing filings.

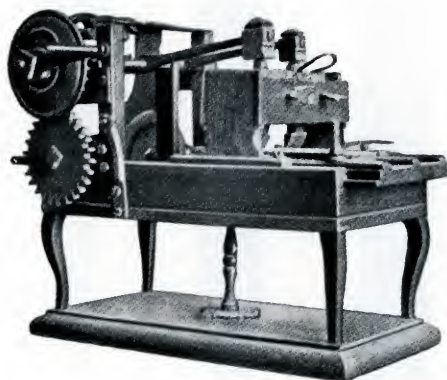
The "Pansar" file does excellent work not only on bronze, pig-iron, steel and brass, but also on aluminium, lead, babbitt metal etc. It is also used successfully for working on wood, horn, stone (marble) etc.—It leaves a fine and smooth surface, which can be painted or varnished without any further polishing.



## ÖBERG FILES

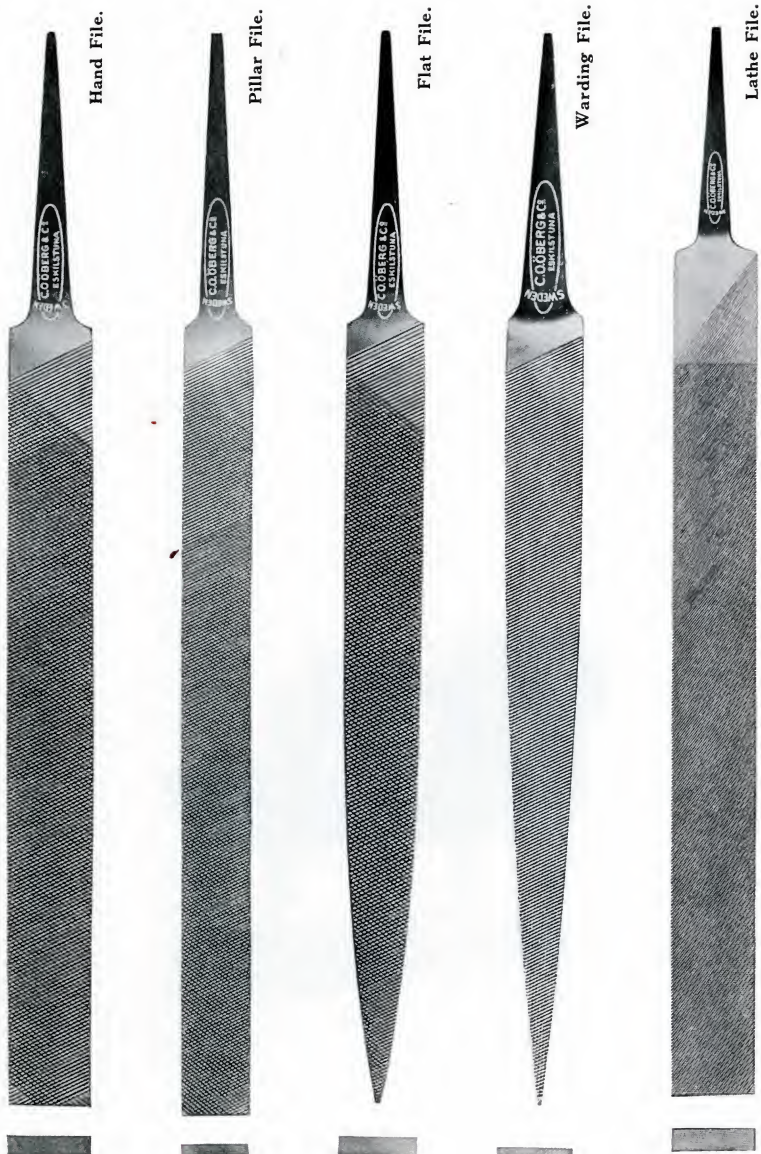
The "Pansar" blade is especially suitable for **filing plane surfaces**, as the convexity, necessary for this purpose, is obtained through the bent holder or back, which has an **even arch from point to tang**.—This "Pansar" blade is also manufactured from special steel and specially heat-treated, so that it can be bent to the shape of an arch without breaking. For this reason it is used for many different kinds of special work. Pansar-files are also very suitable for lathe work.

The "Pansar" wood rasp, a **new type**, is used in the same way as the half-round rasp i. e. for wood working, but it possesses the advantage of being also highly suitable for soft metals.



*Swedish File-cutting Machine from year 1715.*

# OBERG FILES



# OBERG FILES

Half-round File.



Round File.



Cabinet File.



Oval Tumbler File.



Crossing File.



Three Square File.





# ÖBERG FILES

Square File.



Square Rubber.



Knife File.



Barrette File.



Needle File, hand.



"Pansar" Blade, flat.



# ÖBERG FILES

"Pansar" Blade,  
half-round.



Back for "Pansar"  
Blade.



Tanged "Pansar" File.



Mill Saw File, regular, 1 r. e.



Mill Saw File,  
thin, blunt, 1 r. e.





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American Cross Cut Saw File.



Double Edge Saw File.



Double Edge Saw File "Wasa".



Cant Saw File.



Knife Saw File, taper.

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Taper Saw File.



Slim Taper Saw File.



Double-Ender Saw File, with handle.



Blunt Hand Saw File.



Pit Saw File, half-round.

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Band Saw File, taper.



Lead File, half-round.



Half-round Rasp.



Cabinet Rasp.



Flat Rasp.



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Horse Rasp.



Shoe Rasp No. 5.



Shoe Rasp No. 6.



Last Makers' Rasp.

## **SAW FILES.**

As the name implies, saw files are used for **sharpening saws**, but apart from this, also for sharpening axes, hatchets, milling cutters and the like, filing in lathes etc. Saw files are as a rule **single cut** with coarseness in **second cut** or **smooth**.

### ***Use of Saw Files.***

When sharpening saws, it is of the utmost importance to use the right sort of file. We manufacture more than 300 different types and lengths of saw files alone, and are therefore well able to supply **the file best suited to every saw and kind of saw teeth**.

In the selection of saw files do not restrict yourself to short lengths but rather use as **long files** as possible to enable making **steady** and **effective** strokes with the file.

For saws made of rather hard material, fairly smooth cut files should be used. For this purpose, the double cut file is also used in exceptional cases, although **we do not recommend it** because double cut saw files are very liable to leave a "beard" when filing saw teeth.

A **single cut** file gives a much **smoother** and **even** surface than a double cut file. Therefore, the former is preferable because a smooth surface more easily gives a keen edge and point to the saw tooth.

The very best result and the keenest edge on the saw is obtained with the **smooth, single cut**, which also as a rule is recommended by saw sharpening experts, although this coarseness of cut does very likely not possess the same capacity for output as the second cut saw file.



## OBERG FILES

Although the methods of filing often vary, we have nevertheless, in consultation with saw blade manufacturers, tried to compile the following list of the purposes for which the most common saw files are used. We do not claim that this table is the only correct one, but it is an attempt to assist our customers as far as possible:

For:	Use:
(Illustrations of saw tooth patterns A to I on page 29—30).	
mill saw blades (also called frame saws or gang saws) and circular saws	mill saw files
band saw blades with ordinary tooth pattern (A)	taper or blunt band saw files, slim taper saw files for 7 mm. or finer shape of teeth, mill saw files with 2 round edges for teeth over 20 mm. and for teeth with a straight tooth bottom (B)
cross cut saws and others with ordinary wolf tooth pattern (C)	mill saw files with 1 round edge, taper saw files, cant saw files
cross cut saws with combination of saw teeth—so-called North American pattern with rakers and cutting teeth (D)	mill saw files, American cross cut saw files, taper saw files, cant saw files
filing down the gullet	pit saw files, mill saw files with 2 round edges, knife saw files

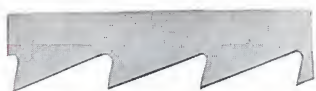
## "ÖBERG FILES"

For:	Use:
one man cross cut saws	cant saw files, mill saw files, taper saw files, American cross cut saw files, knife saw files, pit saw files
ice saws, pit saws	the same as for band saw blades with ordinary tooth pattern, also pit saw files, taper saw files
one man cross cut saws (felling saws) with combination of saw teeth—so-called North American pattern	the same files as for cross cut saws with combination of saw teeth, and furthermore knife saw files, double edge saw files and double edge saw files "Wasa"
hand saws with straight (E) and universal (F) tooth pattern (the latter one a hybrid between the oblique (G) and straight tooth pattern)	taper saw files, regular and slim, knife saw files, double edge saw files and double edge saw files "Wasa"
buck and web saws (also so-called farmers' saws) with wide gullets for cutting green wood (H & I)	taper saw files, cant saw files, double edge saw files, double edge saw files "Wasa", "Snabb" and "Orsa" and knife saw files
joiners' saws, turning webs, back saws, veneer saws and tenon webs	taper saw files, regular and slim, double edge saw files and double edge saw files "Wasa"

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With regard to joiners' saws, tenon webs etc. with oblique style of teeth, we would emphasise the fact that an unskilled operator should preferably use a **double edge saw file** or a double edge saw file "**Wasa**", otherwise the teeth may be easily spoiled by careless sharpening. A skilled craftsman uses to advantage a slim taper saw file.

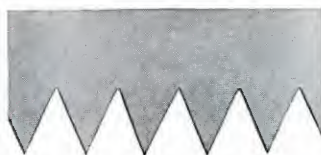
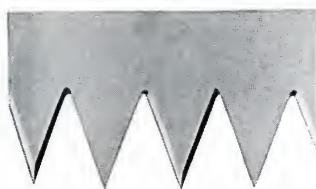
***Illustrations of saw tooth patterns, mentioned on pages 27—28.***



A

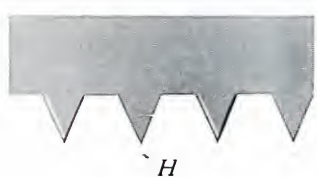
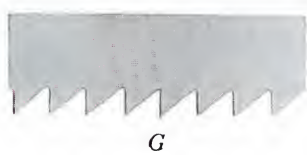
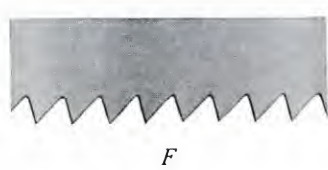
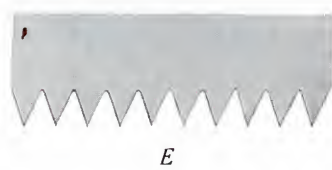
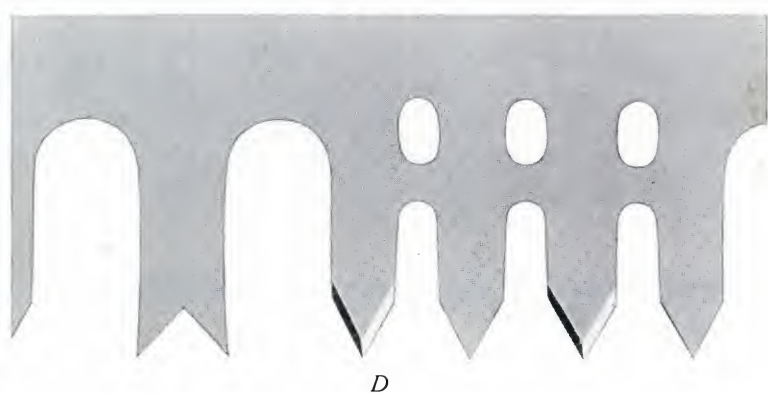


B



C

ØBERG FILES



### ***Sharpening of saws with emery wheels.***

Saw blade manufacturers have issued warnings against sharpening saws by means of emery wheels. This method entails serious risks of the saw blades being destroyed through emery burning. The process is particularly dangerous in sharpening **band saws**, for there is an added risk of "tiring" through bending round the pulley. If, for example, a band saw has emery-burnt gullets and an adhering emery "beard", there will certainly occur, in the opinion of saw blade manufacturers, first cracks in the gullet and then fractures of the saw.

The development of a "beard" alone may also be detrimental to the keenness of the saw, for if a comparatively large "beard" is broken off after a few strokes, the keenness of the saw is destroyed through this, and not by wear and use.

Therefore, for very good reasons we advise **sharpening saws only by using files**.

### ***Sharpening Saws with Files.***

The following summary is well worth careful attention in respect to **saw filing**:

- 1) In connection with all saw filing, **the shape of the teeth** must be retained when filing the gullet. Care should also be taken that the gullets are not filed into too much of a point. Their round shape must be retained, for sharp-pointed gullets form weak spots which may cause fractures in the saw.—Therefore, use the proper file for every saw.
- 2) When filing the gullet of a **new saw** a worn file should be used. A new file, whose edge does not fit exactly into the gullet of the previously unsharpened saw,



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“grabs” in sharpening and the file teeth are broken, spoiling the file.

- 3) The saw blade must be properly fastened so that it does **not vibrate**, for vibrations greatly reduce the **efficiency** of the file and entail a serious risk of breaking the points of the keen file teeth against the thin and rapidly vibrating saw blade.
- 4) The file must be **carried forward smoothly** and **carefully** with the same speed and an even pressure. Always use a **light pressure** on a **new file**. The thin and extremely keen points of the file teeth will cut already with only a light pressure. As the file becomes worn down, the pressure exerted in filing can be increased without any risk of the teeth getting broken.
- 5) Always be careful to see that the file “bites” on the saw. **The file must under no circumstances be allowed to slip**, for if it should suddenly slip on the saw, it gets spoiled at once. Therefore, always adapt the pressure and filing-speed to the hardness of the saw you are working on.
- 6) When sharpening particularly hard saws, care should be taken that there is no oil on the file, for it will then be easier to get it to “bite” on the hard material. Likewise, very resinous wood, which has stuck to the file, should be removed with a suitable brush (see further on this head on page 40).
- 7) When sharpening band saws in a **machine**, care must be taken that the blade is properly fastened, and that the pressure exerted is not too heavy to start with. The machine must be adjusted in such a way that the file drops down upon the saw blade as lightly as pos-

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sible, and only "bites" gradually. This is very important so as to avoid spoiling both saw blade and file.

The machine should not operate with more than 50 or 60 strokes a minute with a 6" file.

### **Description and use of some of the most common types of Saw Files** (See illustrations on pages 21—24).

**Regular Mill Saw File.** Made from a rectangular steel section and **tapers** both in **width** and **thickness**. It is mostly supplied with 1 round edge but also with 2 round or 2 square edges. As standard it is **smooth, single cut**. As **extra finish** we deliver: **Double Cut, Two-tanged** and **Un-tanged**. Lengths, 5" to 16".

This style of file is intended for sharpening mill saw blades, circular saws, cross cut saws, ice saws etc., but it has also found extensive use in sharpening the edges of machine knives, reaper knives, knives of lawn mowers, shears, axes and hatchets, spades etc. With 2 round edges, it is used for band saws with straight tooth bottoms and with normal tooth pattern of more than 20 mm. spacing. In workshops it is used for lathe work, draw-filing and polishing work, especially on bronze and brass as well as on tempered and annealed steel.

**Thin, Blunt Mill Saw File** is **thinner** than the regular mill saw file and of **uniform width** and **thickness**. Mostly supplied with 1 round edge. In standard **smooth, single cut**. Lengths, 6" to 12".

In normal finish it is used for sharpening mill saw blades, circular saws, cross cut saws with fairly **fine teeth**, but like the regular mill saw file, it has come into exten-

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sive use for sharpening all kinds of knives, shears, scissors, milling cutters, axes, hatchets, spades, fish-hooks (therefore sometimes with 2 uncut, square edges) etc., and also for a number of different jobs in workshops, e. g. filing and polishing bronze, brass, pig iron, annealed and tempered steel etc.

This file is also made **extra thin** in lengths of 6" to 8".

***American Cross Cut Saw File.*** Made from a knife-shaped steel section. The back is rounded and cut. **Smooth, single cut.** Lengths, 6" to 8".

***Double Edge Saw File.*** Made from a **double-bevel** steel section, of equal width and equal thickness. It is usually **second cut, single.** Lengths, 4" to 10".

Besides **cutting A, which is standard**, there are 3 other, **extra styles** of cutting, differing in the degree of the angle of slope to longitudinal direction of the file, i. e.

Cutting A



Cutting Y



Cross Cut (F)




Cutting B





It is used for sharpening one man cross cut saws (felling saws), buck saws and hand saws with coarse tooth pattern and especially **for sharpening the teeth to alternating angles** (beveling the edge of teeth). Suitable for joiners' saws, tenon webs etc. with oblique style of teeth.

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**Double Edge Saw File "Wasa"** (extra thin). As standard, the cutting is **B**, but cross cut (F) also occurs (see Double Edge Saw Files). Lengths, 5", 5½" and 6". It is **smooth, single cut** and is used for the same kinds of saws as the regular double edge saw file, but for finer teeth.

**Double Edge Saw File "Snabb"** (square edges). **Second cut, single** with cutting **A** as standard (see Double Edge Saw Files). Lengths, 5½" and 6". For filing wide-spaced gullets, so-called "Snabb" saws or "green wood" saws. (See page 30, Fig. H). 

**Double Edge Saw File "Orsa"** (1 square and 1 thin edge). **Second cut, single** with cutting **Y** as standard, but cross cut (F) also occurs (see Double Edge Saw Files). Length, 6". A special file for "Orsa" blades and similar tooth patterns (combination of ordinary gullets and straight tooth bottom). (See page 30, Fig. I). 

**Cant Saw File.** Made from a  steel section in equal width and thickness. Usually **second cut, single**. Lengths, 5" to 8". **Extra finish** with **thin** edges and also with **cross cut**.

It is chiefly used for sharpening cross cut saws, and one man cross cut saws. Apart from the fact that it is easier to reach the bottom of the gullet with this file, which is **thinner** than the double edge saw file, the flat side of the cant saw file possesses the great advantage of enabling the **levelling of the points of the saw teeth**, for which otherwise a mill saw file would be required. It is also useful for sharpening buck saws (farmers' saws), hand saws of different types etc., and chiefly

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where it is impossible to reach the bottom of the gullet with any other file.

**Knife Saw File**, taper or blunt, made from a single-bevelled steel section and reminds one of a knife blade, hence the name. It is always **single cut** and generally **smooth**. The edge is **cut**, but the **back is uncut**. Lengths, 5" to 8". Extra finish with **cross cut**.

Frequently used for one man cross cut saws, hand saws, buck saws and web saws etc., and especially if the tooth pattern is such, that it is impossible to get down with other files.

**Taper Saw File**. Made from a 3-square steel section and is **tapered**. The **edges are cut** but the **point is uncut**. Usually **second cut, single**. (Note the difference against Three Square File, page 12.) Lengths, 3" to 12".

**Extra finish**: cross cut taper saw file, special oblique angled taper saw file, double cut taper saw file and cut to point.

There is hardly any saw file, which is so widely used as the taper saw file. It is chiefly used for sharpening all kinds of cross cut saws, joiners' saws, hand saws, back saws, buck saws etc. For saws with a coarse tooth pattern, longer files are used, and for a fine tooth pattern the shorter file is best. This file is also often used in workshops for filing grooves etc. and for **sharpening** sundry tools.

**Slim Taper Saw File**, has also a 3-square section and is tapered, but it is **narrower** than the corresponding lengths of the regular taper saw file. Always **smooth, single cut**. Supplied in normal dimension, called "**Slim Taper**" and in extra slim dimension, called "**Extra Slim Taper**". Lengths, 3" to 8".



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Very suitable for all kinds of saws **with fine tooth pattern**, such as hand saws, back saws, pruning saws, butchers' saws, veneer saws, joiners' saws, tenon webs (especially with oblique tooth pattern).

**Double-Ender Saw File.** Made of 3-square steel section and tapers at both ends. Lengths, 8" and 9". Supplied with handle. For Saws with fine tooth pattern.

**Blunt Hand Saw File.** Made from a 3-square steel section and is **parallel** (blunt). It is usually **second cut, single**. Lengths, 3" to 8". Extra finish 4"×8 m/m and 13"×1".

It is used for sharpening the same kinds of saws as the taper saw file.—4" and 4½" very much used for sharpening shoemakers' knives, bradawls etc.

**Pit Saw File.** Either half-round or round, and is **parallel** (blunt). Usually **second cut, single**. Lengths, 4" to 8".

The half-round pit saw file, is used for sharpening pit saws, ice saws and cross cut saws, also for filing down the gullets on such saws. The Round pit saw file is very rarely used and only for filing down the gullets (also called gulleting file).

**Band Saw File.** Made from a 3-square steel section and is as a rule **taper**, but **blunt** (parallel) is also used. Mostly **second cut, single**. Lengths, 3½" to 12".

It is chiefly used for sharpening band saws. Unlike a taper saw file, the edge of the band saw file is **fairly well rounded** in order to fit into the rounded gullet of the band saw and impart to its bottom the proper rounding. A regular taper saw file, with rather sharp edges, ought not be used for sharpening band saws, because the gullet

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thereby becomes taper, and the saw easily breaks as a result of this.

**Extra sizes** made for band saws with large tooth pattern.

### RASPS.

Rasps are generally made with **rasp cut**, but are sometimes **coarse, single cut** and are then called **file-rasps**, or provided with **milled teeth** on one side and are then called "**Pansar**" wood rasps. **Horse rasps** and **shoe rasps** are as a rule made only with one coarseness of cut. **Cabinet, half-round** and **flat rasps** are either bastard, which is most common, or smooth. As with files, the bigger sizes of rasps have a coarser cut than the shorter lengths.

#### **Description and use of some of the most common types of rasps.** (See illustrations on pages 24—25).

**Lead File.** As far as shape and section are concerned it is made in the same way as the corresponding lengths of hand, flat and half-round files. **Coarse, single cut** is standard, but half-round also supplied **extra coarse**. Lengths, 10" to 18".

Used for filing brass, lead, aluminium etc. and is also very suitable for **wood**.

**Babbitt Rasp** is half-round, **extra coarse, single cut** in lengths of 16", 18" and 20". Also made with filed teeth. Used for filing Babbitt.

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**Half-Round Rasp.** Mostly **bastard, rasp cut** in lengths of 6" to 18". Used for wood working and for marble, horn etc.

**Round Rasp.** **Bastard, rasp cut.** Lengths, 8" to 16".


**Flat Rasp.** In form similar to flat file. **Bastard, rasp cut.** Lengths, 8" to 16".

**Cabinet Rasp.** Formed on the same size blank as the cabinet file. **Bastard and smooth rasp cut.** Lengths, 6" to 16".

It is used for the finer kinds of wood work, such as furniture and cabinet-making, for which reason it is also known as a "chair maker's rasp".

**Horse Rasp.** Made from a rectangular steel section, and is **parallel** and of **even thickness**. **Coarse, rasp cut.** The cut is divided into **four fields**, two on each side of the rasp. Three of these fields are, as a rule, provided with **punched, rasp teeth**, and one field with cut **file teeth**. Such a rasp is termed " $\frac{1}{4}$  file".—The horse rasp is also sometimes made with " $\frac{1}{2}$  file", i. e. with two fields rasp cut and two fields file cut. Lengths, 10" to 18".

It is chiefly used by farriers in horse-shoeing work.

**Last Maker's Rasp.** This type is made from  steel section in 12" length, parallel or taper. **Bastard, second cut and smooth, rasp cut.**

For the shaping and finishing of boot or shoe lasts.

**Shoe Rasp.** Made in 10 different models which have been found necessary according to the various types of footwear. The shoe rasps mostly used are models No. 5, No. 5 B and No. 6.

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## SPECIAL FILES.

Special files are made to meet special requirements, and the shape and cut vary according to the use, for which the file is intended.

### A FEW BRIEF RULES FOR FILING.

#### *Fitting a Handle to the File.*

Before using a file, it should be provided with a **suitable** and **proper handle**.

The handle is fitted in the best way by heating the tang of an **old file** and drive it into the wooden handle. Afterwards pull out the old file and put the handle on the new file. A handle put on in this way fits well, and is rigid and safe.

If use is not made of an old file but the tang of the new file is heated, great care must be taken that the cut portion of the file is not heated, because the file teeth in that case are very easily annealed.

It is very important that the tang is driven deeply into the handle right up to the shoulder, so that it cannot get bent, if strained during filing.

#### *Cleaning the File.*

If a good result in filing is wanted, the file must be kept free from filings etc. not only after work is finished but also frequently in the course of work.

A suitable brush for such a purpose is either an ordi-



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nary brush made of, by way of example, bristles, or a fine wire brush, a so-called file card.

When filing material which does not get firmly clogged in the file-teeth, the file can be cleaned by knocking its edge against the bench. In the case of dead-smooth files it is often sufficient only to rub over it with the hand or a rag (or against the overalls).

A very good way to clean file-teeth, firmly imbedded with filings, is to run a piece of soft metal (e. g. copper, zinc or brass) across the file in the direction of the grooves. A bit of hard wood run across in the same way, frequently also serves the same purpose.

If the file has been used on wood, and the teeth are clogged with more or less resinous filings, preventing the file from "biting", the wood can be dissolved by holding the file in boiling water for a few minutes, and it can then easily be cleaned with an ordinary brush. If the file is to be cleaned from oil, this can most easily be done by rubbing it against a bit of chalk or charcoal, and then clean with a file-brush.

### ***Use of Oil and Chalk in Filing.***

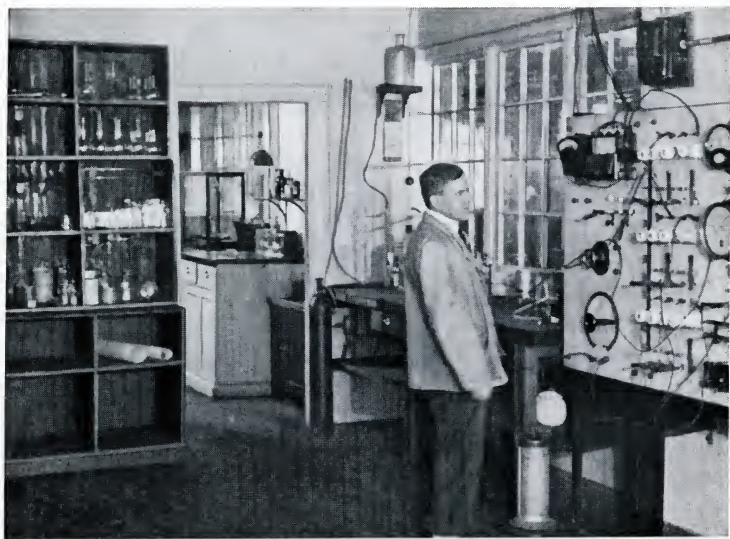
New files are always oiled to prevent rusting. As a rule, the file can be used exactly as it comes from the factory, but there are instances, when all oil must first be removed, viz. when filing hard material, e. g. large, flat surfaces of castings, hardened and annealed steel (saws) etc.

If in filing such material the layer of oil on the file is too thick, the material filed seems to be glassy and the file slips, destroying the teeth. In this case all oil must be removed in the previously described manner, in order to get the file to "bite", for it must be remembered

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that the first rule in filing is to see that the file "bites" on the material upon which it is used.

Nevertheless, sometimes it may be an advantage to use oil on a file, e. g. when polishing soft iron or steel. If the teeth are then filled with oil or chalk, they do not cut so deeply and the file is prevented from scratching the material. It must, however, be remembered that if oil or chalk are used in filing, these substances soon get mixed with filings, and the file must therefore frequently in the course of the work be cleaned with a brush and then rubbed afresh with oil or chalk.



*A view from the laboratory.*

### ***A Few Words about Filing in General.***

- 1) Place the vice at a convenient height so that the surface to be filed is on a level with the workman's elbow.
- 2) Fasten the work to be filed properly, so as to **avoid vibration while filing.**
- 3) Always file slowly and use sufficient pressure to **prevent the file from slipping.** It is a golden rule in all filing to work in such a manner that the file "bites", for if it slips, the speed may become so great that the heat generated by the friction between file and work is sufficient to anneal the teeth of the file. This holds good particularly in filing **thin, hard objects**, e. g. saws, or in filing a thin edge in a lathe which rotates too rapidly. All files are delivered glass-hard, and if the teeth are annealed, the file is spoiled.
- 4) Adapt the filing **pressure** and filing **speed** to the hardness of the material you are working on. As long as **the file is new, a light pressure should be exerted**, as otherwise the keen, fine teeth are destroyed, but as the file gets worn, the pressure should be increased.
- 5) Do not exert any pressure upon the file on the back stroke, but only on the **advancing stroke.**
- 6) Be careful when using a new file over a **sharp or thin edge.**
- 7) Always use a new file first for **large surfaces** upon cast iron and "metal" (brass, bronze, etc.), and then, as it gets somewhat worn, on **narrower surfaces or thinner edges** of the same material. When it will no longer "bite" on these metals, it should be used on

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steel and soft iron. At any rate, the scale on both "metal" and cast iron must first be removed with a worn file.

- 8) Do not throw a file carelessly into the tool chest amongst hammers, pliers and other tools, but keep it separate from these and remember that these fine, keen file teeth are mostly destroyed more through carelessness than by wear and tear in filing.

*Trade*



*Mark*



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*Give only the very best tools to your skilled and well paid workers.*

*Remember that a filer's output, for each time unit, depends above all on the file he is using.*

*Therefore it is bad policy to purchase your files on the basis of price only and in the belief that files bought cheaply are cheapest in use. First of all make sure that you get files of highest quality and best manufacture. You will find that such files, although costing somewhat more, will prove to be much more economical in the long run.*

*You are, in many instances, paying a skilled worker more for an hour's work than you pay for the file you give him.*

*To give him poor quality files, because they are cheap, will handicap his work and worry him.*

*In order to get 100% efficiency provide him therefore only with the very best files.*

*Öberg files are precision tools of the very highest standing and are fully warranted as to durability and keen cutting qualities, for which reason they are specified by skilled workers all the world over.*



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